

SANITARY LANDFILL INSPECTION GUIDANCE

version 10-1/95

FACILITY NAME _____
SWMF PERMIT NUMBER _____ FACILITY TYPE _____

DATE OF INSPECTION _____ INSPECTOR _____

Note: This inspection guidance is intended for use by DEQ solid waste compliance staff for inspections of active and/or inactive sanitary landfills including sanitary landfills or disposal units that are implementing closure activities.

SOLID WASTE MANAGEMENT REGULATIONS VR 672-20-10

SECTION

CRITERIA

GENERAL INFORMATION (3 2.4)

2.4.B.1. Is this an existing permitted facility?

YES N/A NO

If so, has the owner/operator submitted proper notice for continued operation beyond July 1, 1992?

YES N/A NO

2.4.B.4. Is this facility operating vertically within the disposal area footprint established as of October 9, 1993?

YES N/A NO

If so has the owner/operator complied with the requirements of H.B. 1205?

YES N/A NO

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5.1.B.1. Is the facility surrounded by barriers which control access and prevent illegal disposal?

YES N/A NO

5.1.B.2. Are the access roads designed and constructed for all weather conditions?

YES N/A NO

5.1.B.3. Is operating personnel provided access to adequately heated and lighted shelter and essential sanitation facilities personnel?

YES N/A NO

5.1.B.4. Are natural or artificial screens in place for aesthetics and noise attenuation?

YES N/A NO

5.1.B.5. Is the facility equipped with a permanent or mobile means of communication?

YES N/A NO

5.1.B.6. Are adequate run-on and run-off control systems in place?

YES N/A NO

Are drainage structures in place that prevent ponding and erosion, and minimize infiltration of water into waste cells?

YES N/A NO

5.1.B.11. Does the leachate management system provide for collection, treatment, storage, and disposal in accordance with § 5.5?

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YES N/A NO

5.1.B.14. Have the final contours and elevations of the finished landfill been specified?

YES N/A NO

The final elevation shall not exceed _____ above mean sea level (M.S.L.).

5.1.B.15. Are finished side slopes stable and configured to adequately control erosion and run-off?

YES N/A NO

Are side slopes steeper than 33%?

YES N/A NO

If so, have necessary slope stability calculations provided?

YES N/A NO

5.1 B.16. Are two bench marks established and maintained on-site?

YES N/A NO

Are the bench marks identified on the facility plans?

YES N/A NO

5.1.C.1. Is an inspection plan, that meets the minimum requirements of this section, in place to detect and prevent disposal of hazardous waste and PCBs?

YES N/A NO

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5.1.C.2. Is waste properly compacted at the working face and confined to the smallest area practicable?

YES N/A NO

Is daily cover consisting of compacted soil placed on all exposed solid waste prior to the end of each operating day?

YES N/A NO

If yes, is the cover 6" thick?

YES N/A NO

If no, does the facility use an approved alternative daily cover?

YES N/A NO

Has intermediate cover been placed on areas that have not received waste in 30 days?

YES N/A NO

Has the integrity of the intermediate cover system been maintained?

YES N/A NO

Have areas which have not had waste applied in over one year received final covering cap?

YES N/A NO

Has vegetative cover been established on all exposed final cover material within four months

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of placement?

YES N/A NO

5.1.C.3. Is an attendant on duty during hours of operation?

YES N/A NO

5.1.C.4. Are disease vectors controlled?

YES N/A NO

5.1.C.5. Are safety hazards controlled through an active safety program?

YES N/A NO

5.1.C.6. Is adequate equipment and operators on-site to effectively manage the facility?

YES N/A NO

5.1.C.7. Has the facility implemented a gas management plan in accordance with § 5.4?

YES N/A NO

Are gas monitoring results kept on site?

YES N/A NO

5.1.C.8. Does open burning occur on site?

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YES N/A NO

If so, is the burning conducted away from areas where waste has been disposed or is actively being disposed and in accordance with a permit from the DEQ Air Pollution Program?

YES N/A NO

5.1.C.9. If open burning occurs, does the facility have a fire control plan available for public review?

YES N/A NO

5.1.C.10. Is waste being deposited into surface water or groundwater?

YES N/A NO

5.1.C.11. Are run-on/run-off control systems effective and maintained?

YES N/A NO

5.1.C.12. Is the facility causing a point and/or non-point source discharge of pollutants into waters of the United States or into wetlands?

YES N/A NO

If so, is the discharge permitted under VPDES?

YES N/A NO

5.1.C.13. Is litter and blowing paper confined to the refuse holding area and operating areas?

YES N/A NO

Does dust and/or odors constitute a nuisance or hazard?

YES N/A NO

If permitted by the operator, is salvaging controlled within a safe designated area?

YES N/A NO

Is fugitive dust and mud minimized on main roads and access roads?

YES N/A NO

Are internal roads maintained to be passable in all weather conditions?

YES N/A NO

If the facility is within 5,000/10,000 feet of an airport, are birds a hazard?

YES N/A NO

5.1.C.16&17. Has any waste been received that is not allowed in sanitary landfills or not allowed by the facility permit?

YES N/A NO

5.1.C.18. Are reasonable records of date, quantity, and origin of waste received maintained?

YES N/A NO

Have the results of sampling and analysis to establish background been submitted within 15 days of completing the analysis?

YES N/A NO

Has the owner/operator submitted an annual groundwater monitoring report (Due by March 1 of each year)?

YES N/A NO

Does the report include a potentiometric surface map for groundwater elevation data collected during the past year, results of the groundwater quality assessment program, and rates of contaminant migration?

YES N/A NO

CLOSURE (3 5.1.E)

Note: Landfills with permits that do not include a closure plan as a part of the permit, and do not have a DEQ approved closure plan in the operating record for the facility, (typically the older, one page permits), will not be required to obtain a permit amendment when modifying the closure plan in the operating record to reflect an approved alternate final cover design, extension of the time allowed for closure activities, or changes in operating plans or facility design which affects the closure plan. Landfills with permits that do include a closure plan as a part of the permit, and landfills that have DEQ approved closure plans in their operating records, will be required to obtain a permit amendment.

5.1.E.3.a & c Does the facility have a written closure plan, or an amended closure plan placed in the operating record ?

YES N/A NO

If yes, does the closure plan include:

5.1.E.3.a.(1) A description of those measures to be taken and procedures to be employed to close the facility in a manner that minimizes the need for further maintenance , and controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, the post closure escape of uncontrolled leachate, surface runoff, or waste decomposition products to the groundwater, surface water, decomposition gas migration, or to the atmosphere ?

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YES N/A NO

5.1.E.3.a.(2) An estimate of the largest area ever requiring a final cover ?

YES N/A NO

5.1.E.3.a.(3) An estimate of the maximum inventory of waste ever on-site over the active life of the facility ?

YES N/A NO

5.1.E.3.a.(4) A schedule for final closure which includes the anticipated date when waste will no longer received, the date when completion of final closure is anticipated, and intervening milestone dates which will allow tracking of the progress of closure ?

YES N/A NO

5.1.E.3.b Has the facility=s operating plan changed and/or has the design of the facility changed in a manner that affects the facility=s closure plan ?

YES N/A NO

If yes (and applicable - see note above),

Has the owner or operator amended the facility=s closure plan to reflect those changes ?

YES N/A NO

Has the facility notified the Director of the intent to close ?

YES N/A NO

Has the owner/operator posted at least one sign notifying all persons of the closing and providing a notice prohibiting further receipt of waste?

YES N/A NO

8.0.A. Is the facility accepting any special waste(s)?

YES N/A NO

If so, does the facility have approval from the Director to accept the special waste(s)?

YES N/A NO

8.3. Is there any evidence of liquids being disposed of in the landfill?

YES N/A NO

8.4. Are more than 1000 tires stored on site?

YES N/A NO

Are tires split, cut, or shredded before disposal?

YES N/A NO

8.5. If drums are accepted, are they empty, properly cleaned, opened at each end, and crushed

before disposal?

YES N/A NO

8.6. Are white goods accumulated for more than 60 days?

YES N/A NO

FINANCIAL ASSURANCE REGULATIONS (VR 672-20-1)

Is the facility required to post financial assurance?

YES N/A NO

Has the financial assurance documentation been updated annually?

YES N/A NO

VIRGINIA CODE REQUIREMENTS

Has the owner/operator filed and maintained an accurate disclosure statement?

YES N/A NO

Is the owner/operator licensed by the Department of Professional and Occupational Regulation as a Certified Landfill Operator?

YES N/A NO

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Name of licensee:

License Number:

5.1.D GROUNDWATER MONITORING

NOTE: Most of the information required in this section should be maintained on file at the facility and is to be reviewed during the on-site inspection of the facility.

5.1.D.5 DETECTION MONITORING

Required at all SLF's except those in an Assessment Monitoring Program

Has the facility implemented a groundwater monitoring program?

YES N/A NO

Does the facility have at least one up-gradient and three down-gradient monitoring wells?

YES N/A NO

How many groundwater monitoring wells does the facility have ?

Upgradient =

Downgradient =

Are the down-gradient wells installed at the waste management unit boundary or at the closest practicable distance hydraulically downgradient of the boundary?

YES N/A NO

5.1.D.5.a COMPLIANCE SCHEDULE

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Was this facility in existence as on October 9, 1993 ?

YES N/A NO

How far is this facility from a drinking water intake (surface or subsurface) ?

< 1 mile > 1 mile but < 2 miles > 2 miles UNKNOWN

NOTE: Facilities operating before October 9, 1993 and < **1 mile** from a drinking water intake must be in compliance with the Final Detection requirements by October 9, 1994. Facilities operating before October 9, 1993 and > **1 mile but < 2 miles** from a drinking water intake must be in compliance with the Final Detection requirements by October 9, 1995. Facilities operating before October 9, 1993 and > **2 miles** from a drinking water intake must be in compliance with the Final Detection requirements by October 9, 1996. Facilities placed in operation after October 9, 1993 must be in compliance with the Final Detection monitoring requirements before waste can be placed in the unit.

By what date will the facility have to be in compliance with the Final Detection monitoring requirements ?

Which type of groundwater monitoring is the facility currently conducting?

Interim (Phase I) Monitoring _____(go to pages 14 to 16)

Final Detection Monitoring _____(go to pages 17 to 19)

Assessment Monitoring _____(go to pages 20 to 21)

On what date did the facility implement this type of groundwater monitoring program ?

Comments regarding facility's implementation of this type of monitoring program:

5.1.D.5.b

INTERIM (PHASE I) MONITORING PROGRAM

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NOTE: After October 9, 1993, this applies only to those existing sites that were in operation as of October 9, 1993, are > 1 mile from a drinking water intake (surface or subsurface), and have not already entered into an Assessment Monitoring Program.

Is this the 1st year of groundwater monitoring for this facility ?

YES N/A NO

If (yes):

Have quarterly samples been taken and analyzed for the parameters establishing groundwater quality to establish background groundwater quality ?

YES N/A NO

If (yes):

Have at least **four** (4) replicate measurements been obtained from each **background** monitoring well, and at least one (1) measurement been obtained from each downgradient monitoring well, and have these samples been analyzed for the parameters used as indicators of groundwater contamination to establish initial background ?

YES N/A NO

By what date is the facility is to complete (or did complete) it's initial background sampling?

Are (or have) the results of the initial background sampling for the groundwater quality parameters and the indicator parameters being (or been) submitted within 15 days after completing each analysis ?

YES N/A NO

After initial background for the quality parameters has been established, have samples been obtained and analyzed annually for the groundwater quality parameters ?

YES N/A NO

On what dates did the facility complete its most recent sampling and analysis for the groundwater quality parameters ?

Sampling =

Analysis =

After initial background for the indicator parameters has been established, at least semi-annually, have at least **four** (4) replicate measurements been obtained and analyzed on **each** monitoring well for the parameters used as indicators of groundwater contamination?

YES N/A NO

On what dates did the facility complete its most recent sampling and analysis event for the indicator parameters ?

Sampling 1st replicate =

Analysis 1st replicate =

Sampling 2nd replicate =

Analysis 2nd replicate =

Sampling 3rd replicate =

Analysis 3rd replicate =

Sampling 4th replicate =

Analysis 4th replicate =

Has the owner/operator, at least annually, evaluated the data on the static groundwater surface elevations (SGSE) to determine whether the requirements for locating the monitoring wells continues to be satisfied ?

YES N/A NO

Date of most recent SGSE evaluation =

If (yes):

Does the evaluation show that the groundwater monitoring system is adequate for this facility ?

YES N/A NO

If (no):

Has the owner/operator modified (or initiated modifications for) the number, location, or depth of the monitoring wells at the site to bring the groundwater monitoring system into compliance ?

YES N/A NO

What date will the modification(s) (i.e. changes to the groundwater monitoring system) be initiated at the facility and what date will they be completed ?

Initiated =

Completed =

With each semi-annual sampling event for the indicator parameters (i.e. four (4) replicate measurements from each monitoring well), has a statistical analysis which compares the results from the semi-annual sampling event against the upgradient well(s) and each well's own initial background, been conducted to determine if any significant changes have occurred in the indicator parameters ?

YES N/A NO

Does the comparison of the upgradient wells (i.e. the results from the upgradient well's semi-annual sampling event -vs- the results from the upgradient well's initial background) show a statistically significant increase (or pH decrease) ?

YES N/A NO

Does the comparison of the downgradient wells (i.e. the results from the downgradient well's semi-annual sampling event -vs- the results from the downgradient well's initial background (or) -vs- the results from the up-gradient well's semi-annual sampling event) show a statistically significant increase (or pH decrease) ?

YES N/A NO

If (yes)

Has the statistically significant increase (or pH decrease) been confirmed through an additional sampling event conducted within 30 days of initially identifying the statistically significant change ?

YES N/A NO

If (yes)

Has the owner/operator notified the Director within 14 days of the confirmation ?

YES N/A NO

Has the owner/operator established an Assessment Monitoring Program within 60 days of the confirmation ?

YES N/A NO

By what date is the facility is to establish (or did establish) an Assessment Monitoring Program ?

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Has the facility's permit been amended to specify conditions that are designed to ensure that solid waste constituents do not exceed the limits during the compliance period ?

YES N/A NO

5.1.D.5.c

FINAL DETECTION MONITORING PROGRAM

Has a FDM program been initiated at the time specified in VSWMR § 5.1.D.5?

YES N/A NO

Were four independent samples from each well taken during the first FDM event to establish background?

YES N/A NO

Were the samples analyzed for the constituents listed in VSWMR Appendix 5.5?

YES N/A NO

Are sampling events being conducted semi-annually and have the results of each event been compared to the initial background, by statistical analysis, to determine any significant increases over background levels?

YES N/A NO

If a significant increase has been identified:

- has the o/o notified the Director, within 14 days, which constituents have shown a significant increase?

YES N/A NO

- has the o/o established an Assessment Monitoring program meeting the requirements of VSWMR § 5.1.D.6 within 90 days of identifying the significant increase?

YES N/A NO

5.1.D.6

ASSESSMENT MONITORING PROGRAM

Note: The owner or operator shall implement an assessment monitoring program whenever a statistically significant increase, over background, has been detected for one or more of the constituents listed in Appendix 5.5.

Within 90 days of triggering the assessment monitoring program, has the owner or operator sampled and analyzed the groundwater, (at least one sample from all downgradient wells) for all the constituents listed in VSWMR Appendix 5.1?

YES N/A NO

Annually, after triggering the assessment monitoring program, has the owner or operator sampled and analyzed the groundwater, (at least one sample from all downgradient wells) for all the constituents listed in VSWMR Appendix 5.1?

YES N/A NO

Note: The Director may specify an appropriate alternate frequency for repeated sampling and analysis of the full set of Appendix 5.1 constituents.

For any Appendix 5.1 constituents detected, (as a result of the initial or annual analysis of the complete Appendix 5.1 list), have four independent samples been taken from each upgradient and downgradient well?

YES N/A NO

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If yes, has background been established for those constituents?

YES N/A NO

Note: The Director may approve an appropriate subset of monitoring well to be analyzed for Appendix 5.1 constituents during assessment monitoring.

Note: The Director may delete any of the Appendix 5.1 monitoring parameters for a landfill unit if the owner or operator demonstrates that the deleted constituents are not reasonably expected to be in or derived from the waste contained in the unit.

Within 14 days of receipt of the results from the initial or annual Appendix 5.1 sampling events, did the owner or operator notify the Director of which 5.1 constituents were detected?

YES N/A NO

Note: If the concentrations of all Appendix 5.1 constituents are shown to be at or below background values for two consecutive sampling events, the owner or operator shall notify the Director of this finding and may return to detection monitoring.

Within 90 days of receipt of the results from the initial or annual Appendix 5.1 sampling events, and semi annually thereafter, have all wells been resampled for the Appendix 5.5 constituents?

YES N/A NO

Within 90 days of receipt of the results from the initial or annual Appendix 5.1 sampling events, and semi annually thereafter, have all wells been resampled for the Appendix 5.1 constituents that were detected during the initial or annual Appendix 5.1 sampling events?

YES N/A NO

If yes, has background been established for those constituents?

YES N/A NO

Note: The owner or operator shall determine a groundwater protection standard for each Appendix 5.1 constituent detected in the groundwater. (See VSWMR § 5.1.D.6.h)

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Has groundwater protection standards been established for all Appendix 5.1 constituents detected during the initial or annual Appendix 5.1 sampling events?

YES N/A NO

Has groundwater protection standards been established for all Appendix 5.5 constituents detected during the sampling event occurring within 90 days of obtaining the results from the initial or annual Appendix 5.1 sampling events or the semi annual Appendix 5.5 sampling events?

YES N/A NO

Note: If the concentrations for any Appendix 5.1 constituents are above background values, but all are below the established groundwater protection standards, the owner or operator shall continue in the assessment monitoring program.

Has a permit amendment been requested to incorporate the groundwater protection standards that have been established?

YES N/A NO

If yes, was this permit amendment requested within 90 days of establishing the groundwater protection standards?

YES N/A NO

Are any Appendix 5.1 constituents detected at statistically significant levels above the established groundwater protection standards in any sampling event?

YES N/A NO

If yes, has the owner or operator notified the Director identifying the Appendix 5.1 constituents that

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have exceeded the established groundwater protection standards?

YES N/A NO

Did this notification occur within 14 days of this finding?

YES N/A NO

For landfills that have Appendix 5.1 constituents detected at statistically significant levels above the established groundwater protection standards in any sampling event, has the owner or operator installed additional monitoring wells to characterize the nature and extent of the release?

YES N/A NO

For landfills that have Appendix 5.1 constituents detected at statistically significant levels above the established groundwater protection standards in any sampling event, has the owner or operator installed at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sampled this well for all constituents in Appendix 5.5 and for all Appendix 5.1 constituents detected during the initial or annual Appendix 5.1 sampling events?

YES N/A NO

For landfills that have Appendix 5.1 constituents detected at statistically significant levels above the established groundwater protection standards in any sampling event and contaminants has migrated off-site, has the owner or operator notified all persons who own land or reside on the land that directly overlies any part of the plume of contamination?

YES N/A NO

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For landfills that have Appendix 5.1 constituents detected at statistically significant levels above the established groundwater protection standards in any sampling event, has the owner or operator initiated an assessment of corrective measures as required by VSWMR § 5.7.A, within 90 days of the finding?

YES N/A NO

Note: An owner or operator may demonstrate that a source other than the facility caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. A report documenting this demonstration shall be certified by a qualified groundwater scientist or approved by the Director. If a successful demonstration is made, the owner or operator shall continue monitoring in accordance with the assessment monitoring program and may return to detection monitoring if the Appendix 5.1 constituents are at or below background for two consecutive sampling events. Until a successful demonstration is made, the owner or operator shall comply with VSWMR § 5.1.D.6.g, including initiating an assessment of corrective measures.

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